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U.S. servers slurp more power than Mississippi

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A correction was made to this story. [Read below for details.](#)

It's no secret that the servers behind every Web 2.0 company, bank Internet site and corporate e-mail system are consuming ever larger amounts of power. But now a Lawrence Berkeley National Laboratory study to be released Thursday has quantified exactly how much.

[Servers](#) in the United States and their attendant cooling systems consumed 45 billion kilowatt-hours of energy in 2005. That's more than Mississippi and 19 other states, according to study author Jonathan Koomey, a scientist at Lawrence Berkeley National Laboratory and consulting professor at Stanford University.

And the computers' electricity appetite is still growing fast.

"Over a five-year period from 2000 to 2005, there has been about a doubling," Koomey said. Most of the growth is from the widespread adoption of lower-end servers costing less than \$25,000, he said.

[Server power demand has moved high up customer priority lists](#)--especially with rising power costs and overstuffed data centers--and hardware makers are responding. Among the touted fixes are [energy-efficient processors](#), power consumption caps, water cooling and [consolidation of work from numerous inefficient low-end servers to fewer, more-powerful machines](#).

The study also estimated the world's server power consumption in 2005 at 123 billion kilowatt-hours. The server power consumption accounted for 1.2 percent of total U.S. power consumption and 0.8 percent of worldwide power consumption, Koomey said.

Based on the number of servers IDC forecasts to ship, the world's server power consumption will increase another 40 percent over 2005 levels by 2010, according to Koomey, assuming per-server power consumption stays at 2005 levels. But if server power consumption grows at past rates, 2010 power consumption will be about 75 percent greater than 2005 levels, he said.

Chipmaker Advanced Micro Devices--one of several hardware companies that have embraced energy efficiency as part of their sales pitch--funded the study. The study included supporting infrastructure such as data center air-conditioning and lighting, but not other computing equipment such as storage arrays or network switches, Koomey said. That other equipment in total consumes about a third that of servers, he said.

Correction: This story misstated the U.S. and global server power consumption for 2005. The correct figures are 45 billion kilowatt-hours and 123 billion kilowatt-hours, respectively.

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